```
GENERAL INFORMATION:
APPLICANT: COMMONWEALTH Scientific and Industrial Rsrch. Org.
APPLICANT: COMMONWEALTH SCIENTIFIC AND INDUSTRIASE
FILE OF INVENTION: MALATHION CARBOXYLESTERASE
FILE REPERRINGE: ALLOTING DOCKET NO. 6235515 50179-051
CURRENT APPLICATION NUMBER: US/09/068,960A
CURRENT FILING DATE: 1998-05-20
EARLIER APPLICATION NUMBER: PCT/AU96/00746
EARLIER FILING DATE: 1996-11-22
EARLIER FILING DATE: 1995-11-23
FARLIER FILING DATE: 1995-11-23
RUMBER OF 5EG ID NOS: 43
SOFTWARE: PALENTIN Ver. 2.0
SEG ID NO 13
LENGTH: 570
TYPE: PRT
TYPE: PRT
                                                                                Ş
                                                                                                                                      Ş
      8
                            Ş
                                                         밁
                                                                                                               밁
                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                ; ORGANISM: Musca domestica US-09-068-960-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 8
US~09-068-960-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 13, Application US/09068960A
                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                     Query Match
                               181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                         121
                                                                                   121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               541 ISDELKMIDVPEMDKIKQWESMFEKHRDLF 570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     301 BERTIKKYMEPEGPTYEPYQTADCYLPKHPREMYKTAWGNSIPTWMGNTSYEGLEFTSILK 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121 LNPETKRPVLVYIHGGXFIIGENHRDMYGPDYFIKKDVVLINIQYRLGALGFLSLNSEDL 180
                                                                                                                61
                                                                                                                                       61
                                                                                                                                                                                                                        / Match 76.4%; Score 2348; DB 4; Length 570; Local Similarity 74.2%; Pred. No. 2.9e-237; nes 423; Conservative 73; Mismatches 74; Indels
                                                                                                                                                              LNPETKRPVLYYIHGGGFIIGENHRDMYGPDYFIKKDVYLINIQYRLGALGELSLNSEDL 180
||||:|:|||:||:||| || ||:|::|||||:|| |||:||
LNPDKRRPVMYFIHGGDFIEGEANRNWFGPDYFMKKPVVLVTVQYRLGVLGFLSLKSENL 180
                                                                                                          IPYAQPPVGELREKAPQRPTPWDGVRDCCNHKDKSVQVDFITGKVCGSEDCLYLSVYTNN 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NQLAKRMPKESREYKTIERMTGIWIQFATTGNPYSNEIEGMENVSWDPIKKSDEYYKCLN 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EWPPNHRLLQLRENHTSGTPVYLYREDPDSEDLINPYRIMRSGRGVKGVSHADELTYFFW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NVPGNAGLKDQVMALRWIKNNCANFGGNPDNITVFGESAGAASTHYMMLTEQTRGLEHRG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ISDELKMIDVPENDKIKQWESMFEKHRDLF 570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FWFPMHRLLQLRFNHTSGTPVYLYRFDFDSEDLINPYRIMRSGRGVKGVSHADELTYFFW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EERTNKVMFPFGPTVEPYQTADCVLPKHPREMVKXAWGNSIPTMMGNTSYEGLFFTSXLK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NVPGNAGLKDQVMALRWIKNNCANFGGNPDNITVFGESAGAASTHYMMLTEQTRGLFHRG
                                                                                                                                                                                                                                                                                                                           Sequono: 8 Requinous
                                                                                                                                                                                                                Indels .
                                                                                                                                                                                                                        <u>..</u>
                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  240
                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
```

```
RESULT 9
US-08-669-524-8
US-08-669-524-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 8,
Patent No.
                                                                                                                    TELEFAX: 703-684-1124
INFORMATION FOR SEQ ID NO: 8:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFOR
                                                                                                                                                                                                                                                               CURRENT APPLICATION MUMBER: US/08/669.47
                                                                                 SEQUENCE CHARACTERISTICS
LENGTH: 572 amino aci
                                                                                                                                                     TELECOMMUNICATION INFORMATION: TELEPHONE: 703-684-1111
                                                                                                                                                                                        ATTORNEY/AGENT INFORMATION:
NAME: Price, Robert L.
REGISTRATION NUMBER: 22,685
REFERENCE/DOCKET NUMBER: 1451-021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: SMYTH, KETTIE A.
TITLE OF INVENTION: ENZYME BASED BIOREMEDIATION
NUMBER OF SEQUENCES: 22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           421 FWFPMHRLLQLRENHTSGTPVYLYREDFDSEDLINYRIMRSGRGVKGVSHADELTYFFW 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              361 QYPEVVKELESCVNYVPWELADSERSAPETLERAAIVKKAHVDGETPTLDNFMELCSYFY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               301 BERTHKYMEPFGPTVEPYQTADCVLPKHPREMVKTAWGNSIPTMMGNTSYEGLFFTSILK 360
                               STRANDEDNESS:
TOPOLOGY: 11r
                                                                                                                                                                                                                                                                                                                                                                                                                                                           STREET: 99 Canal
CITY: Alexandria
STATE: Virginia
                                                                                                                                                                                                                                                                                                                                                                                                                                          COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NQLAKRNPKESREYKTIERMTGIWIQFATTGNPYSNEIEGHENVSWDPIKKSDEVYKCLN 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ISDELKHIDVPEMDKIKQWESMFEKHRDLF 570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NILSKRLPKESREYKTIERMVGIWTEFATTGKPYSNDIAGMENLTWDPIKKSDDVYKCLN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FLFPMHRFLQLRFNHTAGTPIYLYRFDFDSBEIINPYRIMRFGRGVKGVSHADBLTYLFW 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QMPMLVKELETCVNFVPSELADAERTAPETLENGAKIKKAHVTGETPTADNFMDLCSHIY 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ERMONKVMFPFGPTVEPYQTADCVVPKPIREMYKSAWGNSIPTLIGNTSYEGLLSKSVAK 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IGDELKYMDLPEMDKIKQGASIFDKKKELF 570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                , Application US/08669524
5843758
                                                                amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Virginia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            E: Lowe Price Leblanc & Becker
99 Canal Center Plaza, Suite 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RUSSELL, ROBYN J.
NEWCOMB, RICHARD C.
ROBIN, Geoffrey C.
BOYCE, Thomas M.
CAMPELL, Peter M.
PARKER, Anthony G.
PARKER, Anthony G.
OAKESHOTT, John G.
                                                                               572 amino acids
               peptide
                                              single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                420
```